A Survey on Deep Learning for Symbolic Music Generation: Representations, Algorithms, Evaluations, and Challenges

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Abstract

Significant progress has been made in symbolic music generation with the help of deep learning techniques. However, the tasks covered by symbolic music generation have not been well summarized, and the evolution of generative models for the specific music generation task has not been illustrated systematically. This paper attempts to provide a task-oriented survey of symbolic music generation based on deep learning techniques, covering most of the currently popular music generation tasks. The distinct models under the same task are set forth briefly and strung according to their motivations, basically in chronological order. Moreover, we summarize the common datasets suitable for various tasks, discuss the music representations and the evaluation methods, highlight current challenges in symbolic music generation, and finally point out potential future research directions.